

REMARKS

The Examiner's objections and rejections have been carefully considered. Applicants have amended the claims in an attempt to resolve the remaining issues in order to obtain an allowance. More specifically, the "PAP II protein" has been further defined along the lines of the disclosures on pages 5-9 of the specification, thus including additional structural and functional recitations into the claims. Since Applicants were using the terms "analogs" and "mutants" interchangeably when referring to the PAP II protein, to eliminate any possible confusion, they now use the recitation "analogs" in the claims. Claim 1 has also been amended, as per the disclosure on page 7, lines 46-48, to indicate that the glutamate (E) residue refers to position 172 of PAP II (1-285), which as disclosed on page 5, lines 28-32 as the mature protein. Thus, this residue is shown at position 197 of SEQ ID NO:4 (which is the 172nd residue of the mature PAP II protein, taking into account the 25-amino acid signal sequence). This is consistent with the numbering scheme taught in Poyet, *et al.*, Biochem. Biophys. Res. Comm. 253:582-87 (1998) (cited on page 5 and incorporated by reference into the specification), as well as the scheme used throughout the present specification (i.e., all specific positions refer to the mature protein. Claim 18 has been amended to be consistent with amendments made to claim 1.

Thus, no new matter has been added. Accordingly, entry of the amendment is respectfully requested, particularly, since it is believed to resolve all outstanding issues and place claim 1-5, 12, 18 and 32 in condition for allowance.

Applicants respectfully submit that the amendments to the claims and the remarks that follow effectively overcome the grounds of rejection of claims 1, 2, 4, 5, 12 and 18 under 35 U.S.C. § 112, second paragraph, set forth on pages 2-4 of the Office Action. Specifically, the encoded PAP II protein is

further recited in terms of a reference to a wild-type protein (i.e., the immature and mature PAP II proteins defined by amino acid residues 1-310 and 26-310, respectively, in SEQ ID NO:4), or analogs of the wild-type protein that contain E172 and which exhibit anti-fungal and/or anti-viral activity. Applicant submits that the present claims, as amended, would be clear and definite to persons skilled in the art, when read in light of the present specification and the prior art.

The objection to claim 1 on the ground that the recitation "recombinant plant cell or part thereof," is vague and indefinite is respectfully traversed. In as much as the merits of the objection appear more directed to issues of scope, Applicants repeat the arguments set forth in the Amendment dated August 11, 2003, and respectfully submit that a person skilled in the art would readily understand the metes and bounds of this phrase, when read in light of the specification and the prior art. Nonetheless, to expedite prosecution, Applicants would be willing to further amend claim 1 by changing "recombinant" to "transformed" (consistent with disclosures in the specification e.g., page 28, lines 23-25).

In view of the amendments to the claims deleting the recitation "mutants", Applicants submit that the objection to the claims based on this recitation are moot. Nonetheless, even though Applicants have exchanged the term "mutant" for "analog", they submit that the recitation "analog", as it is used in the claims to distinguish from the wild-type PAP II *protein*, would have a clear and definite meaning to persons skilled in the art, when read in light of the specification and the prior art. As stated at the bottom of page 3 of the Office action, the Examiner herself appreciate that this term would be readily understood to embrace fragments of the wild-type protein, as well as other non-wild-type proteins that differ from the wild-type protein in terms of amino acid deletions, substitutions

etc. (See e.g., page 7, lines 44-46 and page 8). The functional recitations do, however, require that the analog possesses anti-fungal and/or anti-viral activity (discussed on pages 8 and 9 and in the working examples).

Lastly, the Examiner's indication regarding the position of glutamate (E) residue at position 172 is acknowledged. As explained above, this residue appears at position 172 of the mature PAP II protein and thus at position 197 of the immature PAP II protein. The claims have been amended accordingly (including deletion of any reference to the functional significance of the E172 residue from the standpoint of catalytic activity, which is believed to be unnecessary). Alternatively, Applicants would be amenable to introducing another sequence identifier directed to PAP II (1-285), with amino acid residues 26-310 of SEQ ID NO:4 being renumbered as amino acid residues 1-285.

In view of the foregoing, reconsideration and withdrawal of all grounds of rejection under § 112, second paragraph are respectfully requested.

Applicants respectfully submit that the presently claimed invention, as amended, satisfies the requirements of § 112, first paragraph (written description). The present specification demonstrates, e.g., by way of description, structures, functions and specific embodiments, that the present inventors not only had possession of their invention, but that the present inventors had possession of their invention and adequately describe it by way of various descriptive means. In fact, as Applicants pointed out in their previous response, the number of specific embodiments in the specification promoted an election of species requirement. In view of the foregoing, reconsideration and withdrawal of the grounds of rejection under § 112, first paragraph (written description) are respectfully requested.

As it is believed that all of the rejections set forth in the Official Action have been fully met, favorable reconsideration and allowance are earnestly solicited.

If, however, for any reason the Examiner does not believe that such action can be taken at this time, it is respectfully requested that he/she telephone applicant's attorney at (908) 654-5000 in order to overcome any additional objections which he might have.

If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

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Respectfully submitted,

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